



## PERSEUS HORIZONTAL LEVEL

### LF61 & LF62 PERSEUS ATEX/IECEX Exd, Exia & INDUSTRIAL LEVEL SWITCH

This range of switches features a robust high quality housing with 1 or 2 sealed SPDT microswitches and has been designed for use in environments where explosive gases can be present (e.g. gas fields, oil rigs & chemical plants etc). One of the benefits of the Perseus range is the separation of the flameproof and adjustment chambers allowing adjustment of the set point with power on and the switch in operation.



Switching is effected in this unit through transforming, by means of a eccentric cam at fulcrum, the vertical motion of the float with level change to the considerably reduced movement of a horizontal switch plunger which is arranged to operate a one or two SPDT/SPCO microswitches.

This type of level switch can be used on tanks under pressure or vacuum, being suitable for pressures up to 3.5 Bar (only with spherical float) and liquid temperatures up to 100°C. It is suitable for low temperature operation but will not operate if the liquid is frozen.

The device can be mounted through a 27mm hole drilled in the side of the tank with joint washer and back nut provided. (access inside the tank will be required to attach the float. Alternatively it can be provided with a flange and cylindrical float which will allow for the insertion of the switch complete with float.

## FEATURES

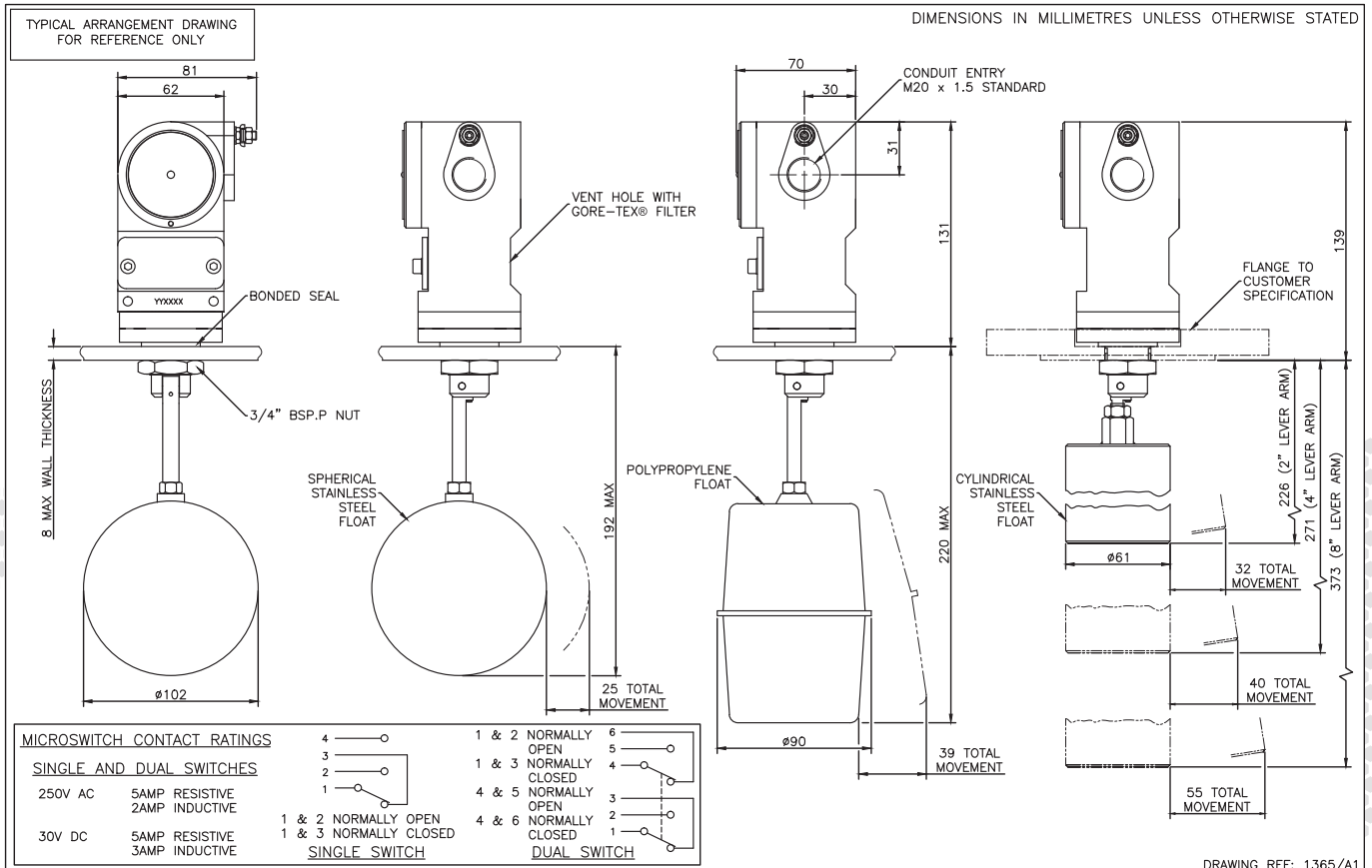
- ✓ Black anodised aluminium switchcase to IP67 standards.
- ✓ Single or dual microswitch option.
- ✓ SIL 2 – IEC61508 proven reliability.
- ✓ ATEX/IECEX Flameproof version  
CE II2G Exd IIC  
T6 Ta = - 50 to +74°C & T5 Ta = - 50 to +89°C  
(with or without resistors)
- ✓ ATEX/IECEX Intrinsically safe  
CE II1G Exia IIC  
T6 - 50 to +78°C, T5 +93°C, T4 +128°C  
(without resistors)
- ✓ ATEX/IECEX Intrinsically safe  
CE II1G Exia IIC  
T5 - 50 to +72°C & T4 - 50 to +122°C  
(with resistors)

<b>SWITCHCASE MATERIAL</b> A = BLACK ANODISED ALUMINIUM		<b>ELECTRICAL CONNECTION</b> _ - M20 LEAVE BLANK C = 1/2" NPT ADAPTOR F = M25 ADAPTOR	
<b>SWITCHCASE</b> LF6 = STANDARD LR6 = WITH RESISTORS	<b>MICROSWITCH OPTIONS</b> 1 = 1 X SPDT 2 = 2 X SPDT DUAL SWITCHES ARE MECHANICALLY LINKED TO GIVE DPDT SWITCHING ACTION	<b>FLOAT MATERIAL</b> S = 316 STAINLESS STEEL P = POLYPROPYLENE	<b>ELECTRICAL CONNECTION</b> B = RIGHT HAND SIDE
<b>L F 6 1 1 A B / F S 0 5 0 S / X B _</b>			
<b>SWITCHCASE MATERIAL</b> A = BLACK ANODISED ALUMINIUM	<b>CERTIFICATION</b> O = ATEX/IECEX Exia INTRINSICALLY SAFE B = ATEX/IECEX Exia FLAMEPROOF A = INDUSTRIAL / MARINE	<b>FLOAT AND ROD</b> FS050 = 4" SPHERICAL FLOAT WITH 4" ROD FS051 = CYLINDRICAL FLOAT WITH 4" ROD FS052 = CYLINDRICAL FLOAT WITH 8" ROD FS053 = CYLINDRICAL FLOAT WITH 2" ROD	<b>FLANGE</b> X = NO FLANGE A = 2" ANSI FLANGE B = DN50 FLANGE

**Wetted parts :** 316 stainless steel with Viton seal

**Process temperature limitations :** 0°C to 100°C

**Process connection :** 3/4" BSP.P



## INDUSTRIAL SWITCHES

### INTRODUCTION

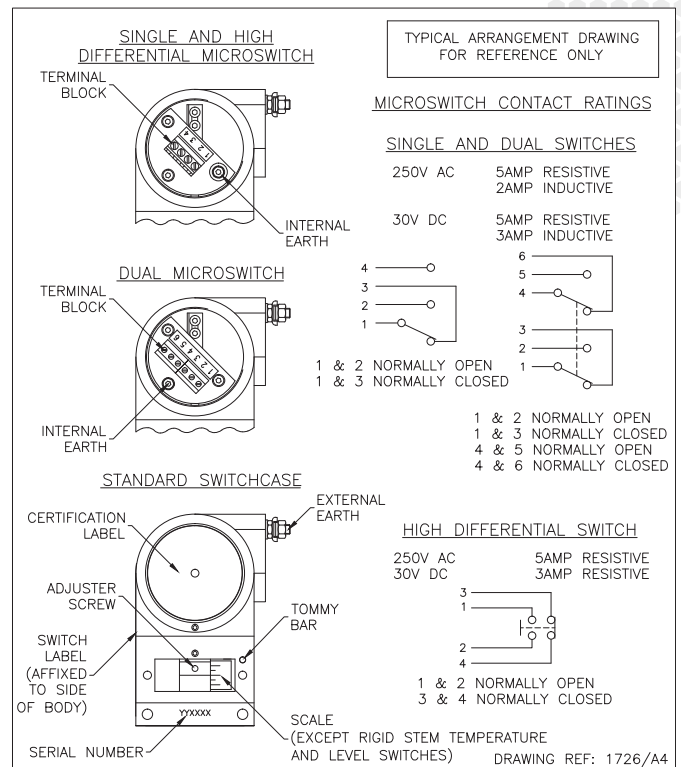
The Perseus **pressure, vacuum, differential pressure, temperature, and level** switches are designed for use in environments where explosive gases can be present (e.g. Gas fields, Oil rigs and Chemical plants etc.) and have been ATEX and IECEx certified as detailed overleaf (SIL2 - IEC61508 proven reliability).

These switches are manufactured from a high quality casting which offers robust construction and protection to IP67 for use within heavily polluted industrial environments. A special feature of the instruments is the separation of the flameproof and adjustment compartments allowing for safe on-site adjustment of the set point with power on and the switch in operation.

Perseus Exd switches must be installed in accordance with BS EN 60079-14

### CALIBRATION

The design features a simple form of adjustment against a calibrated scale. This enables a user to order switches set at a predetermined point or stock a mid range setting and adjust switches to suit the particular application. The set point can be safely adjusted with the switch electrically live. Adjustment is made by removing the access cover and rotating the set point adjuster using the supplied tommy bar stowed to the right of the scale plate. The setting is read from the centre of the set point adjuster against the calibrated scale. Rotation to the left will increase the set point and to the right decrease it.



# TECHNICAL SPECIFICATION

**Switchcase & covers:** Black anodised aluminium case and 316 stainless steel adjustment cover.

**Microswitch:** 1 x SPCO/SPDT or 2 x SPCO/SPDT gold flashed silver contacts. Dual switches are mechanically linked to provide DPDT switching action, reset of switches could be up to 3% apart. Dual microswitches may increase deadband by a factor of two.

**Microswitch rating:** 5 Amps @ 250 VAC resistive, 2 Amps @ 250VAC inductive  
5 Amps @ 30VDC resistive, 3 Amps @ 30 VDC inductive

**Electrical Connections:** Terminals suitable for cable 0.5 - 2.5 mm<sup>2</sup>.  
(Max 1.5 mm<sup>2</sup> for dual microswitch version)

**Electrical Conduit Entry:** M20 x 1.5 ISO. ½" NPT via adaptors

**Environmental Protection:** IP67 in accordance with BS EN 60529 : 1992 & IEC 60529 : 2001.

**Vibration and shock parameters:** Switches were subjected Lloyds Register Test Specification 1, section 13 BS EN 60068-2-6 : 1996 (Test Fc vibration) and BS EN 60068-2-27 : 1995 (Test Ea shock).

**Temperature Limitations:** Pressure, Vacuum and Differential Pressure.

**Process:** Diaphragm actuated (unless otherwise stated) -30 to +90°C (Nitrile) or -20 to +150 Deg.C (Viton). Piston actuated -30 to 120°C (Nitrile), -20 to +150°C (Viton), -50 to +150°C (PTFE) or -30 to +125°C (EPDM).

**Ambient:** -50 to +85°C (standard). **Storage:** -50 to +85 Deg.C  
(For temperature, level and flow switches please refer to specific pages).

**Certification:** Switches can be supplied for gas environments.

**ATEX/IECEx certified Exd Flameproof** - Gas (with or without resistors)  
CE Ex II2G Exd IIC T\* Gb. T6 Tamb -50°C to +74°C, T5 Tamb -50°C to +89°C.

Special conditions for safe use. 1) No modifications must be made to the flamepaths of the unit without consultation of the drawings. 2) When conduit is utilised it must be sealed in accordance with Clause 13.2.2 of EN 60079-1:2007 with a suitably approved (Ex d IIC Gb) conduit sealing devise. 3) Suitably rated cable must be selected based on T Class shown above. 4) Only suitably certified Ex d IIC Gb cable glands to be used.

**ATEX/IECEx certified Exia Intrinsically Safe** – Gas  
CE Ex II1G Exia IIC T6 Ta -50 to +78°C, T5 Ta +93°C, T4 Ta +128°C or  
CE Ex II1G Exia IIC T5 Ta -50 to +72°C, T4 Ta +122°C (with resistors).

Special conditions for safe use. 1) Aluminium may only be used when the ignition hazardous assessment shows there is no risk of ignition from incendive impact or abrasion sparks.

**AEX certification** is available on medium pressure, metal diaphragm and high pressure switches and rigid stem temperature switches.

**Accuracy:** +/-1% at 20°C.

## ABOUT PYROPRESS

Our products are designed to work in demanding and hazardous environments which require fast and cost effective solutions in instrumentation and control.

Pyropress control sensors provide safe and reliable electrical switching of alarm or control circuits in response to changes in temperature, pressure, differential pressure, vacuum, fluid, flow and level conditions.

## QUALITY

To support the design of state of the art products the company has invested heavily in the latest CNC technology.

We are able to produce our own components to a high degree of accuracy assuring a reliable and consistent quality product.